IDENTIFYING INFORMATION:

NAME: Rocha, Luis M

ORCID iD: https://orcid.org/0000-0001-9402-887X

POSITION TITLE: George J. Klir Professor of Systems Science

PRIMARY ORGANIZATION AND LOCATION: Binghamton University (SUNY), School of Systems Science and Industrial Engineering, Thomas J. Watson College of Engineering and Applied Science, Binghamton, New York, United States

Professional Preparation:

ORGANIZATION AND LOCATION	DEGREE (if applicable)	RECEIPT DATE	FIELD OF STUDY
Los Alamos National Laboratory, los Alamos, NM, USA	Postdoctoral Fellow	07/1997 - 12/1998	Complex Systems
Binghamton University, Binghamton, NY, US	PHD	01/1992 - 05/1997	Systems Science
Instituto Superior Técnico, Lisbon, Not Applicable, N/A, Portugal	MENG	10/1988 - 04/1990	Systems Engineering
Instituto Superior Técnico, Lisbon, Not Applicable, N/A, Portugal	BENG	10/1985 - 06/1988	Mechanical Engineering

Appointments and Positions

2021 - present George J. Klir Professor of Systems Science, Binghamton University (SUNY), School of Systems Science and Industrial Engineering, Thomas J. Watson College of Engineering and Applied Science, Binghamton, New York, United States

2024 - present Visiting ERA Chair Professor, Strategic Integration of Complex Networks and Systems for Advancing Biomedical Research, Católica Medical School, Portugal, Lisbon, Not Applicable, N/A, Portugal

2019 - 2025 Director, Consortium for Social & Biomedical Complexity, Binghamton University (SUNY), Indiana University, Binghamton, New York, United States

2017 - 2023 Director (PI), NSF-NRT Interdisciplinary Training Program in Complex Networks and Systems, Indiana University, Bloomington, Indiana, United States

2017 - 2019 Visiting Professor, Center for Theoretical Physics, Aix-Marseille University, Marseille, Not Applicable, N/A, France

2016 - 2018 Visiting Scientist, Neuroscience & Clinical Sciences, Fundação Champalimaud, Portugal, Lisbon, Not Applicable, N/A, Portugal

2008 - 2020 Director, Complex Networks & Systems track, Informatics PhD Program,, Indiana University, Bloomington, Indiana, United States

2005 - 2015	Director, Computational Biology Collaboratorium and Ph.D Program, Instituto Gulbenkian de Ciencia, Oeiras, Not Applicable, N/A, Portugal
2004 - 2021	Professor, Indiana University Bloomington, School of Informatics and Computing, Bloomington, IN, United States
2002 - 2024	Principal Investigator, Instituto Gulbenkian de Ciencia, Oeiras, Not Applicable, N/A, Portugal
1999 - 2004	Technical Staff Member, Los Alamos National Laboratory, Modeling, Algorithms, and Informatics (CCS-3), Los Alamos, NM, US
1997 - 1999	Postdoctoral Associate, Los Alamos National Laboratory, Modeling, Algorithms, and Informatics , Los Alamos, NM, US
1995 - 1997	Adjunct Professor, Binghamton University, State University of New York, Binghamton, New York, United States
1990 - 1991	Graduate Research Assistant, Laboratorio Nacional de Engenharia Civil, Lisbon, Not Applicable, N/A, Portugal

Products

Products Most Closely Related to the Proposed Project

1. Brattig Correia R, Barrat A, Rocha LM. Contact networks have small metric backbones that maintain community structure and are primary transmission subgraphs. PLoS Comput Biol. 2023 Feb;19(2):e1010854. PubMed Central PMCID: PMC9949650.
2. Gates AJ, Brattig Correia R, Wang X, Rocha LM. The effective graph reveals redundancy, canalization, and control pathways in biochemical regulation and signaling. Proc Natl Acad Sci U S A. 2021 Mar 23;118(12) PubMed Central PMCID: PMC8000424.
3. Simas T, Correia RB, Rocha LM. The distance backbone of complex networks. J Complex Netw. 2021 Dec;9(6) PubMed Central PMCID: PMC10859673.
4. Brattig-Correia R, Almeida JM, Wyrwoll MJ, Julca I, Sobral D, Misra CS, Di Persio S, Guilgur LG, Schuppe HC, Silva N, Prudêncio P, Nóvoa A, Leocádio AS, Bom J, Laurentino S, Mallo M, Kliesch S, Mutwil M, Rocha LM, Tüttelmann F, Becker JD, Navarro-Costa P. The conserved genetic program of male germ cells uncovers ancient regulators of human spermatogenesis. Elife. 2024 Oct 10;13 PubMed Central PMCID: PMC11466473.
5. Soriano-Paños D, Xavier Costa F, Rocha LM. Quantifying edge relevance for epidemic spreading via the semi-metric topology of complex networks. J Phys Complex. 2025 Sep 1;6(3):035005. PubMed Central PMCID: PMC12314591.

Other Significant Products, Whether or Not Related to the Proposed Project

1. De Domenico M, Allegri L, Caldarelli G, d'Andrea V, Di Camillo B, Rocha LM, Rozum J, Sbarbati R, Zambelli F. Challenges and opportunities for digital twins in precision medicine from a complex systems perspective. NPJ Digit Med. 2025 Jan 17;8(1):37. PubMed Central PMCID: PMC11742446.
2. Sánchez-Valle J, Correia RB, Camacho-Artacho M, Lepore R, Mattos MM, Rocha LM, Valencia A. Prevalence and differences in the co-administration of drugs known to interact: an analysis of three distinct and large populations. BMC Med. 2024 Apr 19;22(1):166. PubMed

Central PMCID: PMC11027217.

3. Correia RB, Rozum JC, Cross L, Felag J, Gallant M, Guo Z, Herr BW 2nd, Min A, Sanchez-Valle J, Stungis Rocha D, Valencia A, Wang X, Börner K, Miller W, Rocha LM. myAURA: a personalized health library for epilepsy management via knowledge graph sparsification and visualization. J Am Med Inform Assoc. 2026 Jan 1;33(1):167-181. PubMed Central PMCID: PMC12758476.
4. Correia RB, Wood IB, Bollen J, Rocha LM. Mining Social Media Data for Biomedical Signals and Health-Related Behavior. Annu Rev Biomed Data Sci. 2020 Jul;3:433-458. PubMed Central PMCID: PMC7299233.
5. Ciampaglia GL, Shiralkar P, Rocha LM, Bollen J, Menczer F, Flammini A. Computational Fact Checking from Knowledge Networks. PLoS One. 2015;10(6):e0128193. PubMed Central PMCID: PMC4471100.

Certification:

I certify that the information provided is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

In accordance with Section 10632 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19232), each individual identified as a senior/key person must certify that they are not a party to a malign foreign talent recruitment program.

Research Security Training Requirement for Federal Award Personnel: In accordance with Section 10634 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19234), each individual identified as a senior/key person must certify that they have completed the requisite research security training that meets the requirements specified in Item 2 of Important Notice No. 149 within 12 months prior to proposal submission.

Certified by Rocha, Luis M in SciENcv on 2026-02-26 16:05:17